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(19) (CA) **CANADIAN PATENT** (12)

(54) LAMINATED SKI WITH APERTURED
UPPER AND LOWER BELTS

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No. OF CLAIMS 2

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FIG. 1

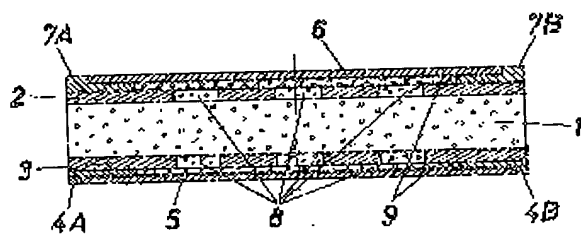
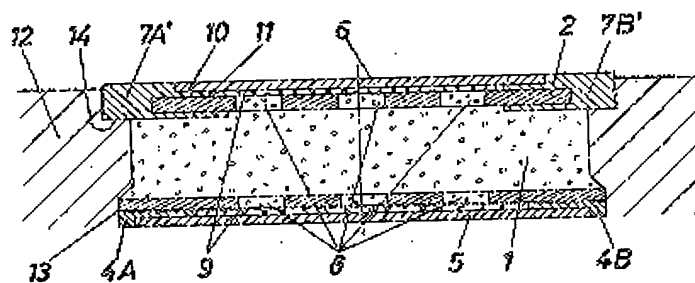


FIG. 2



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Background of the invention

Most skis are laminated. Cores of plastics material and sheet metal elements are bonded by means of elastic adhesives. Many skis of this type are known and their components are often joined by means of thermo-setting plastic materials under the action of heat. Whereas that method of joining the components of the ski is inherently simple, problems have arisen in the selection of the adhesives and the nature of the components to be joined. This is due to the fact that the ski is often subjected to extreme loads owing to the performance of the skier, to his technique and also to large temperature changes.

It is an object of the invention to solve this problem in a simple manner.

Another object of the invention is to utilize the excellent performance qualities of laminated skis and to enable a foaming of the core in such a manner that all components, inclusive of the steel edges, are satisfactorily joined.

Summary of the invention

A laminated ski comprises a core, apertured top and bottom plates, angle-section steel edges along both longitudinal edges of said plates a facing on one flange of the steel edges, so that there is a space between the facing and the plate. Said space is filled by the foamed core material which has penetrated through the apertures in the plates.

In accordance with one feature of the invention, such skis are manufactured in that the lateral steel edges, the tread facing, the top facing, and at least one apertured belt are located in a mold in such a manner that the belt is spaced from one of the two facings. The space on the inside of the belt is then filled with a foamable plastic material to form the core of the ski. The foamable plastic material penetrates through the apertures of the belt and fills the

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space between the belt and the opposite facing so that a positive connection is established between the belt and the core.

Further details of the invention will be explained more fully with reference to the drawing, in which two embodiments of the ski according to the invention are shown by way of example.

Fig. 1 is a transverse sectional view of one embodiment of the ski according to the invention, and

10 Fig. 2 is a transverse sectional view showing a second embodiment of the ski in a mold in which the foamed core of the ski is formed.

The ski shown in Fig. 1 comprises a core 1, an upper belt 2, a lower belt 3, steel edges 4A, 4B, a tread facing 5, a top facing 6, and top edge members 7A, 7B.

The belts 2, 3 extend throughout the width of the core 1 between the latter and the edge members 7A, 7B and 4A, 4B, respectively, and have apertures 8 in any desired distribution along the length of the belts.

20 The top edge members 7A, 7B and the steel edges 4A, 4B are angle sections and are formed in known manner at the free edge of their wider flange with curved recesses, which may closely succeed each other. This wider flange of these angle sections rests on the belts 2 and 3, respectively. The spaces between the narrower flanges are filled by the tread facing 5 and by the top facing 6, respectively. As a result, a space 9 is left between the belt 2 and the facing 6 and between the belt 3 and the facing 5. As will be described more fully hereinafter, these spaces as well as the

30 holes 8 are filled by the foam which forms also the core material 1. As a result, the core 1 is positively connected to the belts 2, 3 and by the foamed plastic material is firmly joined to those components which are disposed outside the belts.

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Simple means for fixing the top edge members are shown in Fig. 2, which will also be referred to for an explanation of the method of manufacturing the ski. In this embodiment, the top edge members 7A', 7B' are angle sections, in which the flange 10 which bears on the core 1 of the ski is formed with a longitudinal slot.

This ski may be manufactured as follows: A mold 12 in which the core of the ski is formed has at one edge a recess 13, in which superimposed components consisting of the tread facing, the steel edges 4A, 4B and the carrying lower belt 3 are located in position for use.

At its edge that is opposite to the recess 13, the mold 12 is formed with a step 14, on which the upper carrying belt 2 is placed when the longitudinal edges of said belt have been inserted into the top edge sections 7A', 7B'. Finally, the top facing 6 is applied, which fills the space defined by the upwardly protruding flanges of the top edge members 7A', 7B'. The mold is then closed and foam is formed to fill the interior of the mold. As has been explained before, the foam forms the core 1 and penetrates through the holes 8 into the spaces 9 and all interfaces between the components so that these components are firmly joined even if they have not been joined by adhesive before. The components of the ski can thus be assembled satisfactorily in a process which is most simple and inexpensive.

It will be understood that various changes in design can be adopted within the scope of the invention. For instance, each lower steel edge 4A, 4B may have a slotted flange, like the top edge members 7A', 7B', and this flange may be fitted on the lower belt 3. Finally, the top facing 6 may be replaced by a varnish coating, a varnish layer, a poured-in compound or the like.

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THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A laminated ski comprising a core, upper and lower belts which cover the core, sectional edge members extending along the outside longitudinal edges of said belts, a top facing carried by the sectional edge members associated with the upper belt, a tread facing carried by the sectional edge members associated with the lower belt, whereby spaces are defined between said top facing and said upper belt and between said tread facing and said lower belt, said belts having spaced apart apertures distributed throughout the length of each belt, said core consisting of foamed plastics material, which has penetrated through the holes of both said belts into said spaces and has filled said spaces, which adjoin the outside surfaces of said belts, whereby said foamed plastics material joins said belts to said facings and to said edge members,

2. A ski as set forth in claim 1, in which at least part of said edge members are angle sections and have a slotted flange, which is fitted on the associated belt.

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LAMINATED SKIAbstract of the Disclosure

A ski comprises a core of foamed plastics material, a top facing, steel edges, a tread facing and at least one bolt between the core and one of the facings. The bolt has apertures which have received core material as it was foamed to form a positive connection and to bond the core to those components which are disposed outside the apertured bolts.

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